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10/797,916	03/10/2004	Rajan Bhandari	R. Bhandari 2-15-4 (LCNT/)	3343
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/797,916

Applicant(s)

BHANDARI ET AL.

Examiner

Jianye Wu

Art Unit

2416

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/30/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/02)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 7/30/2008 have been fully considered. The previous rejections are vacated and a new ground of rejection is made.

2. For **claim 12**, Applicant argues (page 7-9):

a) "Fisher does not teach or suggest which packets are stored in a particular RX FIFO memory shown in Fig. 5 depends on for which communication device such packets are intended" (page 7);

b) "option of identifying packets by a destination MAC address by itself is not sufficient to teach or suggest that the processor 520 defines a storage location for packet according its intended destination", and Fisher "falls short of teaching or suggesting that such information should be used to define where the packet should be stored" (page 7);

c) "Fisher does not disclose sorting and time aligning the received packets" (page 7);

d) "there is no argument put forth in the Office Action the Zehavi supplies what is missing from Fisher, the Office does not establish the prima facie case of obviousness" (page 7-8).

In response, Examiner respectfully disagrees:

a) Fisher clearly shows which packets are stored in a particular RX FIFO memory Fig. 5. For example, packets for Ethernet MAC go to the Rx FIFO connecting to the module of "Ethernet MAC"; while packets for 802.11e

MAC go to the Rx FIFO connecting to the module of "802 11e MAC", and the etc.

b) Applicant provides no support on the assertion of "option of identifying packets by a destination MAC address by itself is not sufficient to teach or suggest that the processor 520 defines a storage location for packet according its intended destination"; and the destination address does provide intended destination of a packet.

c) Fisher clearly suggests that received packets are sorted as First In and First Out order and they are time aligned as packets are stored in Rx FIFO as shown in Fig. 5. It does not matter how much work needs to be done for sorting and time aligning, as soon as the received packets are in the desired status.

d) Office Action recites "In the same field of endeavor" as the reason why Fisher can be combined with Zehavi, which is in accordance with MPEP. Examiner also recites "for efficiency and simplicity" as the reasons for combine Fisher and Zehavi.

For **claim 1**, being the corresponding method claim of claim 12, Applicant makes the similar arguments (page 8-9), to which Examiner's responses are the same.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claim 1-20** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention..

While the claims recite a series of steps or acts to be performed, a **Claims 1, 12, 19-20** recite "orthogonally combining the ... data packet within each group", last 2 lines. It is unclear what is meant by "**orthogonally combining**". It does not appear to have any disclosure on this limitation in Specification.

Claims 2-11 and 13-18 are rejected because they depend from independent claims 1 and 12.

For examination on the merits, the claims will be interpreted as the best understood.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. **Claims 1-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (US 20030214930 A1) in view of Zehavi (US 5757767 B1, hereinafter Zehavi), further in view of Eldar et al. (US 20050216616, A1, hereinafter Eldar).

For **claims 1 and 12**, Fischer discloses a method and an apparatus for combining data packets intended for a common communications device in a communications network, comprising:

an addressing device for defining a storage location (processor 520 of FIG. 5, which decides the address of a storage location) for said received data packets according to for which communications device of said network the received data packets are intended ("uniquely identified by the combination of the destination MAC address", [0076]);

a memory (Rx FIFO of FIG. 5) for storing said received data packets in different sections according to the storage location defined by said addressing device, wherein the data packets stored within each of said different sections are respectively timed aligned ("the sequence number", [0076] indicates timed aligned data packet); and

Fischer is silent on a combiner for orthogonally combining the respective time aligned data packets in each of said different sections of said memory.

In the same field of endeavor, Zehavi discloses the orthogonal encoding such as a fast Hadamard Transformer for applying the orthogonal coding and combining the data packets (col. 4, line 4-18) for efficiency and simplicity (Abstract, line 1).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine Fischer with Zehavi for efficiency and simplicity.

Fischer in view of Zehavi is silent on a timer for defining a time period for receiving data packets.

In the same field of endeavor, Eldar discloses a timer for defining a time period for receiving data packets ([0024], "the packets may be transmitted ... if a timer has expired");

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine Fischer in view of Zehavi with Eldar to use a timer for receiving data packets in order to process packets more efficiently and on time.

As to **claims 2**, Fischer in view of Zehavi discloses the method of claim 1, Fischer further discloses said received data packets are sorted using a MAC header of each of said received data packets ("uniquely identified by the combination of the destination MAC address", [0076]).

As to **claims 3 and 13**, Fischer in view of Zehavi discloses the method of claim 1 and 12, Fischer further discloses said received data packets are stored in different sections of a memory according to for which communications device of said network the received data packets are intended (received packets are stored in different Rx FIFO of Fig. 5).

As to **claims 4**, Fischer in view of Zehavi discloses the method of claim 1, Fischer further discloses comprising sorting for transmission said orthogonally

combined data packets in different sections of a memory according to for which communications device said combined data packets are intended (packets to be transmitted are stored in different Tx FIFO of Fig. 5).

As to **claims 5**, Fischer in view of Zehavi discloses the method of claim 4, Fischer further discloses said orthogonally combined data packets are stored in different sections of a memory according to which communications device of said network the combined data packets are to be transmitted (packets to be transmitted are stored in different Tx FIFO of Fig. 5).

As to **claims 6**, Fischer in view of Zehavi discloses the method of claim 1, Fischer further discloses said orthogonally combined data packets are transmitted to an intended receiver using a single MAC header (MAC Service Data Unit of FIG. 6, which has a single MAC header).

As to **claims 7**, Fischer in view of Zehavi discloses the method of claim 1, Fischer further discloses a respective bandwidth required to transmit each group of said orthogonally combined data packets is substantially the same as a bandwidth required to transmit a largest data packet in each of said groups (FIG. 5, where different group Radio Circuitry 510 and 0/100/1G Ethernet in view of Fig. 6 on data transmission).

As to **claims 8**, Fischer in view of Zehavi discloses the method of claim 1, Fischer is silent on said predetermined time period is substantially greater than or equal to a total time latency for receiving data packets intended for a common communications device of said network.

However, one skilled in the art would be motivated to select said predetermined time period needs to be substantially greater than or equal to a total time latency for receiving data packets for a common communications device in order to the send them to the device at once.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to select said predetermined time period needs to be substantially greater than or equal to total time latency for receiving data packets for a common communications device for the benefit of efficiency.

As to **claims 9**, Fischer in view of Zehavi discloses the method of claim 8, Fischer further discloses data packets in said network are communicated according to a global timing schedule and said time latency is due to differences in the latencies of transmission media of the communications devices of said network (FIG. 5, where different interfaces such as Radio Circuitry 510 or 0/100/1G Ethernet have different latencies in view of Zehavi).

As to **claims 10**, Fischer in view of Zehavi discloses the method of claim 1, Fischer is silent on only data packets having specific MAC headers are orthogonally combined.

However, one skilled in the art would be motivated to apply orthogonal coding to data packets only to data packets having specific MAC headers because of the design choice, such as the data packets having specific MAC header go to a specific device.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to select only data packets having specific MAC headers are orthogonally combined in order to meet desired design specification.

As to **claims 11**, Fischer in view of Zehavi discloses the method of claim 1, Fischer further discloses data packets not orthogonally combined are communicated in said network according to conventional Ethernet protocols (10/100/1G Ethernet of FIG. 5).

As to **claims 14**, Fischer in view of Zehavi discloses the apparatus of claim 12, Fischer further discloses a bit scaler for defining the number of bits to be combined by said combiner (Bus System Interface of FIG. 5 is a bit scaler that interface that does bits conversion between transmission and receiving, as shown in FIG. 4 of Specification).

As to **claims 15**, Fischer in view of Zehavi discloses the apparatus of claim 12, Fischer further discloses said addressing device stores information regarding the MAC header of which data packets are to be orthogonally combined (Receiver 620 stores MAC header as shown in FIG. 6 in view of data packets are to be orthogonally combined by Zehavi in claim 12).

As to **claims 16**, Fischer in view of Zehavi discloses the apparatus of claim 12, Fischer further discloses a Receive MAC for receiving data packets and a Transmit MAC for transmitting the respective orthogonally combined data packets (as explained in claim 12) to an intended communications device (as shown in FIG. 6, where both Receive MAC and Transmit MAC are disclosed in view of data packets are to be orthogonally combined by Zehavi in claim 12).

As to **claims 17**, Fischer in view of Zehavi discloses the apparatus of claim 12, Fischer further discloses said apparatus is implemented in an interconnect switch of said network (system 100 of Fig. 1, with WLAN 110 having switches or routers).

As to **claims 18**, Fischer in view of Zehavi discloses the apparatus of claim 12, Fischer further discloses said apparatus is implemented in at least one of the communications devices of said network (FIG 2, where devices 201, 202, 203 and 221 are all devices according to claim 12 in view of FIG. 2-6).

For **claims 19-20**, Fischer disclose a packet network where data packets intended for a common communications device are combined (the network shown in FIG. 5), comprising:

a non-blocking switch (switches or routers in 110 of FIG. 1) in for interconnecting communications devices of said network; and

a plurality of communications devices (devices 101-109 of FIG. 1 associated with 110 of FIG. 1), wherein at least one of said communications devices according to claim 12 (as disclosed by claim 12 by Fischer in view of Zehavi).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jianye Wu whose telephone number is (571)270-1665. The examiner can normally be reached on Monday to Thursday, 8am to 7pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571)272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jianye Wu/
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